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Critical Success Factors (CSFs) for achieving sustainable social housing (SSH)

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Abstract

The overarching objective of social housing is to meet housing needs, particularly those of the vulnerable households – low and middle income earners. However, there is evidence to show that social housing is not adequately supported to achieve sustainable goals despite its significance for addressing the housing crisis. The aim of this study is to determine the Critical Success Factors (CSFs) for achieving Sustainable Social Housing (SSH) from economic, environmental and social perspectives for meeting housing needs. The document content analysis approach involving relevant literature resources was used for generating the success factors (SFs) for achieving SSH. Findings from this approach were refined before using them in preparing a questionnaire used to gather data from housing authorities (public) and private non-profit social housing organisations in England and they were asked to rank the criticality level of the identified success factors. The data gathered through the relevant documents and respondents were analysed respectively with NVivo and Statistical Package for Social Science (SPSS). Findings revealed some of the CSFs for achieving SSH for meeting housing needs as: adequate funding and provision, affordability, efficient economic planning, appropriate construction technology, environmental protection, use of environmental friendly materials, effective land use planning, appropriate design, security of lives and property, provision of social services and ensuring social cohesion. The paper recommends the use of efficient sustainable development (SD) strategies and legal and institutional frameworks for monitoring and evaluating the delivery of SSH. The Government must embark on effective housing programmes for ensuring adequate provision of social housing that is sustainable for meeting housing needs in the short and long-run. There is need for the Government to regularly provide financial supports to social housing providers and users for addressing the housing crisis. © 2017 The Gulf Organisation for Research and Development. Production and hosting by Elsevier B.V. All rights reserved.

Keywords: Critical Success Factors (CSFs); Document analysis; Questionnaire survey; Social housing (SH); Sustainable Social Housing (SSH)

1. Introduction

The Office of the Deputy Prime Minister (ODPM) defines Sustainable Development (SD) as the achievement of a better quality of life through the efficient use of resources, which realises continued social progress whilst maintaining stable economic growth and caring for the

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environment (OGC, 2007 cited in [Essa and Fortune, 2008](#)). The Brundtland report defines SD as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” ([United Nations, 1987](#)). The two key common concepts contain in the above two SD definitions are: the concept of needs, which seeks to ensure that the essential needs of the poor are adequately met; and the need for addressing every limitation arising from the use of technology and activities of social elements affecting the environment’s ability to meet the present and future needs.

Based on the aforementioned two concepts, social housing should adequately meet housing needs of the vulnerable households on a continuous basis, and at the same time consider the environmental limitations while meeting such needs both in the present and future in relation to the development techniques and social components. However, it requires economic means to provide social service or actualise not-for-profit motive in making it available to beneficiaries and putting environmental protection into consideration while taking social housing development decisions. Sustainability issues are bound to arise where appropriate measures are not adequately and properly linked together in social housing delivery. Therefore, Sustainable Social Housing (SSH) is described as housing that is environmentally friendly, built from recycled materials or other natural resources and energy efficient by using alternatives such as solar power ([Shelter England, 2016](#)). [Oyebanji et al. \(2013\)](#) view SSH as a form of:

“Housing that is made available by governments and/or non-profit organisations through various assisted housing programmes, built with environmental friendly and sustainable materials, have a long-term economic, environmental and social benefits without an increased life-cycle cost, and allowing not only the present but also the future generations to meet their housing needs on the overall social value basis”.

Thus, given the nature of providers, the state and not-for-profit organisations with social or non-profit motives, economic sustainability in social housing can be achieved through various reliable schemes like affordable rents, purchase through mortgage loans at low interest rates and other forms of subsidies ([Cooper and Jones, 2009](#)). This can facilitate SSH delivery on a continuous basis and be financially sustainable over a long term for both the providers and beneficiaries. It can help to avoid waste of natural resources by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure ([Department of Communities and Local Governments – DCLG, 2012](#)). Achieving economic sustainability in social housing has some advantages not only for increasing the supply but for promoting the country’s

economic growth ([Higgins, 2013](#)). For example, the more the supply of SSH, the more the growth of the nation’s assets, provision of job opportunities and the use of recyclable materials and modern technology for adequate provision of social housing to meet housing needs.

From environmental perspective, achieving sustainability in social housing requires taking cognisance of the fact that housing and the environment impact on each other. This happens in a number of significant ways in terms of carbon emissions, land take, water usage, sewerage and flooding ([Shelter England, 2007](#)). Achieving sustainability in social housing also requires the understanding that human beings and the environment are two inseparable components that must support each other in the SD process ([Pattinaja and Putuhena, 2010](#)). Environmental sustainability in social housing can help to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy ([DCLG, 2012](#)).

In addition, the concept of social sustainability in social housing seeks to recognise the diverse nature of the occupiers in terms of cultural backgrounds, pattern of lives, size of households and housing needs ([Oyebanji, 2014](#)). Achieving SSH is all embracing in social context as it gives room for social interaction, security and convenience, access for spiritual development, education, public health facilities and natural resources ([Pattinaja and Putuhena, 2010](#)). SSH has the capacity for supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of the present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community’s needs and support its health, social and cultural well-being ([DCLG, 2012](#)). Furthermore, social sustainability combines the design of social housing with a focus on how the people living and using it relate to each other and function as a community, including the provision of the right infrastructure to support a strong social and cultural life, opportunities for people to get involved, and scope for the place and the community to evolve ([Dixon and Woodcraft, 2016](#)).

Based on the aforementioned factors, giving adequate consideration to the economic, environmental and social elements in social housing provision is significant for achieving SSH. Therefore, if sustainability is to be achieved in social housing, all issues relating to the three pillars need to be addressed holistically. In this paper, these issues are addressed using Critical Success Factors (CSFs) of SSH. The concept of CSFs was first introduced in 1976 and has been regarded as those few key factors absolutely necessary to reach goals (Rockart, 1982 as cited in [Wai et al., 2012](#)). The subsequent section details the CSFs identified in this study for SSH. Prior to that, the methodology adopted is discussed first to show how the CSFs for achieving SSH were identified.

Table 1
Economic success factors.

Economic SFs	Document analysis		Questionnaire Survey ^{III}								
			Public sector <i>N</i> = 59 (100%)						Private Sector <i>N</i> = 120 (100%)		
	F ^I	R ^{II}	1	2	3	1	2	3	Overall		
											Avg. ^{IV}
Affordability	64	1	5.1	5.1	89.8	–	9.1	90.9	90.35	1	
Adequate funding and provision	45	2	5.1	11.9	83.1	–	9.1	90.9	87.00	2	
Appropriate construction technology	9	7	–	15.3	84.7	–	16.5	83.5	84.10	3	
Economic design and efficient use of resources	17	4	1.7	18.6	79.7	–	16.5	83.5	81.60	4	
Provision of infrastructure services	19	3	5.1	13.6	81.4	–	19.0	81.0	81.20	5	
Good governance and political will	15	5	3.4	20.3	76.3	2.5	15.7	81.8	79.05	6	
Efficient management	10	6	–	27.1	72.9	–	23.1	76.9	74.90	7	
Effective legal and policy frameworks	8	8	5.1	28.8	66.1	0.8	33.9	65.3	65.70	8	

I: F = Frequency of occurrence.

II: R = Rank.

III: Likert scale (1 = not critical; 2 = Neutral; 3 = Critical).

IV: Average of criticality = (Public sector Likert scale 3 + Private sector Likert scale 3)/2.

2. Methodology

The methodology of this study involved both desk and field works. The desk work involved the use of a document content analysis and field work involved a questionnaire survey, which were adopted for gathering secondary and primary data respectively in this study. The document content analysis involved an extensive and investigative theoretical review of relevant literature dealing with various Success Factors (SFs) relating to achieving sustainability in social housing (Ihuah et al., 2014). Document content analysis is a research technique used to determine the presence of certain words or concepts within texts or sets of texts and seeks to quantify content in terms of predetermined categories and in a systematic and replicable manner (Busch et al., 2012).

The predetermined categories or the concepts coded for in this study are the economic, environmental and social SFs limiting the achievement of SSH. This is because for social housing to be sustainable, like in any other sector, the triple bottom-line needs to be considered (United Nations Environment Programme – UNEP, 2013). The frequency of the concepts was used to determine the critical levels of the SFs and the set of factors under each category are ranked based on the numbers of frequencies they attained (Colorado State University, 2008). In the context of this research, four main steps were adopted for conducting the content analysis: document selection; manual coding; application of codes to the appropriate texts in the selected documents; and sorting and ranking of coded texts. The various Internet search engines such as Google; Google Scholar; IEEEExplore; Web of Knowledge and Ebscohost etc. were used together with the coded concepts as the key words for the search based on the focus of this research. The sites were considered based on their usefulness as to the wide coverage of the subject areas; quality, quantity and currency of information and bias in the areas of this research. The total number of documents selected for the study was 67, of which 8 were journal papers, 27 were public/government reports, 9 were conference papers, 2 were PhD theses and 21 were other reports. The documents for the content analysis were also chosen based on the quality of their contents, currency, relevance and type. The data was analysed using NVivo version 10 software package. Findings (i.e. list of success factors) from the document content analysis were refined and grouped into economic, environmental and social. Following sections/sub-sections present the findings accordingly.

The document analysis findings were included in a questionnaire to identify the level of criticality of the SFs. Initially the questionnaire was tested using a pilot survey, which was designed and distributed to 100 delegates during the Annual International Conference and Exhibition of the Chartered Institute of Housing, held in Manchester from 12 to 14 June 2012, given its close links to the study area of the paper. Only 9 copies were properly filled and returned due to the length of the questionnaire (8 pages).

A number of observations made were implemented and duly considered in drafting the main questionnaire. One of the main changes made herein was grouping/combining some of the SFs according to their similarity in content to reduce the length of the questionnaire. In the main questionnaire, the combined SFs to achieving sustainability in social housing were listed out and respondents were asked to rate them according to their criticality using a 5 point Likert scale.

The population for this research fall into two categories: social housing practitioners in the public and private (non-profit) organisations in England. The private organisations own and manage social housing and are often referred to as Registered Social Landlords (RSLs) or non-commercial landlords. The public sector comprises of the housing authorities, which have the responsibilities of owning and managing public social housing stock. The two groups of respondents were selected using the 2012 Directory of members of the National Housing Federation (NHF), which constitute of non-profit private housing associations; and the website of the Department of Communities and Local Government – DCLG, UK (2012) for housing authorities. Of the 1200 population in the NHF, only 881 members were selected as they could be reached through postal means and had useful information in their profiles highlighting that they are involved in social housing practices. Copies of the questionnaires were sent to all 140 housing authorities (public) found at DCLG, UK and 881 housing associations (private non-profit) from the NHF directory making a total of 1021 questionnaires.

Of the 1021 copies of the questionnaire sent, 233 copies were returned, but only 179 (public sector = 59; private sector = 120) were considered usable based on the completeness of the questionnaire, making the rate of returned and usable questionnaires as 22.82% and 17.5% respectively. The response rate was accepted given that the range of between 20–30% is accepted for most housing related studies (Akintoye, 2000; Kobbacy, 2013 as cited in Ihuah et al., 2014). The statistical analyses undertaken to analyse the data obtained from the questionnaire survey are: descriptive analysis – frequency and cross-tabulation, a comparison of mean statistics, and one-way analysis of variance (ANOVA). The IBM Statistical Package for the Social Sciences (SPSS) version 20 was used in carrying out the statistical analyses. It is worthwhile noting herein that, although the respondents were asked to rate the criticality using a 5 point Likert scale (5 – Very Critical, 4 – Critical, 3 – Neutral, 2 – Not Critical, 1 – Not Very Critical), however the original variables were recoded during the analysis, to a 3 point Likert scale ('3- Critical', where Very Critical and Critical answers were grouped; 2 – Neutral; '1 – Not Critical', where Not Very Critical and Not Critical answers were grouped). This was considered necessary in order to reduce the number of categories into fewer and manageable categories for certain analyses (Choice Magazine, 2011; Magableh, 2011; Pallant, 2010; Snyder et al., 2008; Buxton and Cornish, 2007).

3. Economic success factors (SFS) for achieving SSH

The economic success factors identified through the document content analysis and used for the pilot survey were refined and regrouped based on findings from the pilot survey into 8 economic Success Factors (SFs) as follows:

1. **Affordability** of social housing by subsidising the costs of provision, purchase, rent and mortgage loan rates etc.
2. **Good governance** for promoting economic growth that allows for the provision of adequate SSH that meets housing needs.
3. Ensure **adequate funding** to enable the public and private sectors to provide adequate sustainable social housing for meeting housing need of every household.
4. **Economic design and efficient use of resources** for the provision of mixed development and flexible structures that promotes and minimises future maintenance and expansion costs.
5. **Appropriate technology** to allow for a refurbishment, minimise waste, protect the environment, and ensure the construction of SSH that meets housing needs.
6. **Efficient management** of housing provision activities during construction and usage to minimise whole-life cost and ensuring continuity and benefits to stakeholders.
7. Efficient economic planning to ensure the **provision of adequate infrastructure services** like roads, water, efficient energy, rail services, etc.
8. **Effective policy and legal frameworks** for enhancing efficient implementation and control of social housing provision activities like procurements, award of contracts and distribution.

Table 1 demonstrates the criticality ranking of the economic SFs. It also shows the frequency of occurrence of the SFs in the 67 documents selected during the content analysis. The outcome reveals that affordability is the most CSFs in achieving SSH. This is apparent from both the document and survey analyses. The outcome is not surprising given that affordable housing can make low to moderate households meet their housing needs with ease, at a cost that is not above their financial ability, and allows them to meet other essential basic living cost (Wiesel and Davison, 2012; Emsley et al., 2008; Abidin, 2009).

Based on the overall rankings, adequate funding and provision is ranked as the 2nd most CSF. Governments and non-profit organisations in many countries started providing social housing when it was noticed that housing provision through the market system could not meet housing needs (Berry et al., 2001; MacLennan, 2008; Powell, 2010). For instance, countries like the UK, New Zealand, Australia, the Netherlands and the USA embarked on several public-assisted programmes such as rent subsidies, mortgage finance, housing benefits and sites and services schemes aimed at meeting housing needs (Burkey, 2005). Government intervention in the form of social housing provision (SHP), especially in providing adequate funding,

is viewed as important in order to: make it available at affordable cost, increase the stock and improve the environment (Berry et al., 2001; King, 2003; Maclellann, 2008; Wadhwa, 2009; Powel, 2010). Adequate funding can also be in terms of budgetary provision for social housing development, grants to developers or through enabling economic policies or strategies (tax incentives, subsidised interest rates, etc.). Like in the UK, governments can embark on appropriate policies to ensure adequate funding of the social housing sector to cover the cost of provision, which usually exceed the resources of private developers or most users (Marcuse, 2006). The general view is that the government has the power of control over all major elements of the housing sector like price, land supply, loans, interest rates, etc. (UN-Habitat, 2008).

‘Economic design and efficient use of resources’ and ‘provision of infrastructure services’ are amongst the top 5 ranked CSFs in both the questionnaire and document analyses. Economic design is required for achieving eco-efficiency and reducing whole-life construction costs in terms of size, cost of energy, materials consumption, and maintenance and management of infrastructures such as urban transport, recreational facilities, and industrial zones for achieving SSH (Council of Europe Development Bank – CEB, 2010). At the same time, a socially sustainable housing need to accommodate the provision of infrastructure services such as education, water, employment, health facilities, playgrounds and green areas for promoting user satisfaction (Kates et al., 2005; Teck-Hong, 2011). Whilst meeting aforementioned needs, SSH concept also encourages the location of housing within neighborhoods that provide residents with good access to transport as well as local amenities and services (Wiesel and Davison, 2012).

Although appropriate construction technology was not mentioned frequently in the literature, as evidence by the document analysis, it was ranked 3rd CSF in the questionnaire analysis. The reason maybe because the developers should make use of modern construction technology to reduce costs, improve building efficiency and minimise environmental effects on construction sites (Department of Trade and Industry, UK, 2006). Social housing developers should also make use of renewable energy technologies for reducing greenhouse gas emissions and improving access to basic energy needs for lighting or hot water usage (UN Habitat, 2011).

The results revealed ‘good governance and political will’, ‘efficient management’ and ‘legal and administrative frameworks’ as the lowest ranked CSFs, both from the questionnaires and document analysis. Nevertheless, they are equally important for achieving sustainability. For example, good governance seeks to promote efficient social housing development strategies, participative systems of governance and institutions and engaging the interests, creativity and energy of all citizens (Power, 2004). The result of good governance is development that gives priority to meeting housing needs, particularly for the poor; advances the cause of women; sustains the environment; and creates

needed opportunities for employment and other livelihood (Jiboye, 2011). There is also need for efficient management to achieve best value in SSH projects to maintain right standards in terms of integrating the supply chain, improving communications amongst stakeholders and increasing user focus (Finch, 2007). Efficient management is also required to actively promote effective, participative sustainable housing delivery systems for meeting needs in the society by engaging people’s creativity, energy, and diversity (Cooper and Jones, 2008). Effective policy and legal frameworks are necessary for ensuring low sustainability cost, standards, and construction techniques that have the potential for providing multiple benefits for residents and the wider population, including: reduced greenhouse gas emissions, durability and resilience to climate change, health benefits, and poverty alleviation (UN Habitat, 2011). They are required for ensuring adequate provision and funding, affordability and monitoring and evaluating developers’ compliance with sustainable energy requirements and environmental protection (Abidin, 2009).

4. Environmental success factors

The environmental success factors identified through the document content analysis and used for the pilot survey were refined and regrouped based on findings from the pilot survey into 4 environmental success factors (SFs):

1. Ensuring **environmental protection** through polluter pays for the act and energy conservation, etc.
2. Ensuring **good accessibility** and provision of adequate **alternative transport modes** like pedestrian, cycling and disabled access routes and public bus services.
3. Use **appropriate land use plan** for avoiding misuse and excessive use of land, human and financial resources.
4. Ensure the use of **appropriate materials** – sustainable and environmental friendly, for reducing maintenance and life-costs.

Table 2 demonstrates the criticality ranking of the environmental SFs. It also shows the frequency of occurrence of the SFs in the 67 documents selected during the content analysis

The outcome revealed ‘good accessibility and provision of adequate alternative transport modes’ and ‘environmental protection’ as the two most CSFs in achieving SSH. This is apparent from both the document and survey analyses.

A sustainable community of social housing should be pedestrian oriented with walking proximity to schools, green space, shopping and place of work (Hanna and Webber, 2005). Social housing tends to be sustainable if provided with improved travel choice and accessibility, reduce the need for travel by car, and shorten the length and duration of journeys, including access to job locations, shopping, health, leisure facilities, meeting places and other

Table 2
Environmental success factors.

Environmental SFs	Document Analysis	Questionnaire Survey ^{III}								
		Public Sector N = 59 (100%)			Private Sector N = 120 (100%)			Overall		Rank
		F ^I	R ^{II}	1	2	3	1	2	3	
Good accessibility and provision of adequate alternative transport modes	45	2	5.1	10.2	84.7	84.3	2.5	13.2	84.3	1
Environmental protection	160	1	5.1	15.2	79.7	86.8	1.6	11.6	83.3	2
Appropriate environmental friendly materials	19	4	8.5	11.8	79.7	86.8	2.5	10.7	83.3	2
Effective land use plan	28	3	11.8	13.6	74.6	66.1	18.2	15.7	70.4	4

I: F = Frequency of occurrence.

II: R = Rank.

III: Likert scale (1 = not critical; 2 = neutral; 3 = critical).

IV: average of criticality = (public sector Likert scale 3 + private sector Likert scale 3)/2.

social services (Power, 2004; Woodcote Local Council, 2012); consequently, user satisfaction can be enhanced.

According to Tan (2011), important antidotes for addressing environmental protection issues is for social housing developers to give consideration to the provision of good environmental qualities within and around housing structures, such as green space provision; alternative transport modes; and proximity to parks. SSH also seeks to ensure environmental protection by use of local and recyclable materials; supply energy from renewable sources like solar or wind; and protect biodiversity with a view to improving the environment and ensure that the natural resources needed for life are unimpaired and remain so for future generations (Woodcote Local Council, 2012). The objectives of The 'European Strategic Environmental Assessment Directive' (2001/142/EC) are to ensure environmental protection and encourage development plans and programmes that give adequate consideration to the limitation of the environment in order to promote SD (Chorley, Preston and South Ribble Core Strategy, Sustainability Appraisal Scoping Report, 2006). According to the Department of Trade and Industry, UK (2006), achieving SD requires that the provision of housing should minimise adverse impacts on the environment, during and after construction activities. Therefore, adopting measures for the reduction, re-use, recycling and recovery of waste in new developments can help to make social housing sustainable.

From the above it's apparent that 'environmental protection' and use of 'appropriate environmental friendly materials' go hand in hand when it comes to environmental CSF. Thus, it is not a surprise that both these factors were ranked 2nd in the questionnaire analyses, with the same result arising from both public and private sectors.

Effective land use is perceived to be last in the rankings from the questionnaire analyses. However, an appropriate land use, in terms of location and size is a prerequisite for achieving SSH. For instance, the concept of SD seeks to encourage a healthy and sustainable environment for housing development, in which people can have access, feel secured in terms of crime reduction, live independent lives, and take pride in their homes (Basildon Council, UK, 2011). Through appropriate land use, social housing can be properly located in an appropriate land area, with necessary social services like recreation, market, roads, pedestrian walkways, and cycling paths. Therefore, land use have close links to good accessibility and provision of adequate alternative public transport modes such as railways, and buses that are necessary for reducing the use of private cars and carbon emissions.

5. Social success factors for achieving SSH

The social success factors identified through the document content analysis and used for the pilot survey were refined and regrouped based on findings from the pilot survey into 9 social success factors (SFs):

1. **Promote equity** by ensuring equal distribution, social justice, gender equality, women empowerment and meet the needs of the less-privileged households in the society.
2. Social housing that **promotes social cohesion** through mixed development for residents with different economic, cultural and social backgrounds using common social facilities: sports, market, transport, health and education.
3. **Stakeholders' participation** by involving them in the development process and encourage community participation in the decision making activities.
4. Minimise poverty through social housing programme that engages community members in the construction activities and provide them with **skills acquisition** and **job opportunities**.
5. Social housing that promotes **community development** and **access to social services** like public transport, health, education, security network, water and electricity
6. Ensuring **welfare** and **quality of life** by providing health and recreational facilities within social housing environment.
7. **Good quality social housing** that creates the sense of a place to live.
8. **Ensuring public awareness** through social housing programme that provides avenues for educating residents on how to accept and live a sustainable lifestyle in their production activities and consumption culture.
9. **Ensuring security of lives and properties** by creating a safe and secure housing environment for the residents and their property.

Table 3 demonstrates the criticality ranking of the social SFs. It also shows the frequency of occurrence of the SFs in the 67 documents selected during the content analysis. The outcome revealed varying levels of ranking from the document and questionnaire survey analyses. However, both the public and private social housing organisations agreed that all the SFs are critical for achieving sustainability in social housing

Although the tables shows 'security of lives and properties'; 'good quality social housing that creates the sense of place to live' and 'promotion of social cohesion' as the lowest ranked factors from the document analysis (6th, 7th and 8th of the 9 factors); they are the most CSFs according to the survey findings. Further, all three scored over 80% overall agreement for average of criticality from the survey. This is not surprising given the relation between the three factors. Social cohesion increases security of lives and properties, and both these factors eventually leads to creating a 'sense of place to live'. Further, these factors also improve welfare and quality of life, which is ranked as the main CSF in the document analysis.

Peace, security, freedom, stability and respect, including the right to employment, human rights protection as well as respect for cultural diversity, are essential for achieving sustainability in social housing (United Nations, 2002). Achieving SSH can help to develop vacant/derelict sites

serving as hide-out for criminals, reduce vehicle crime, burglary, robbery, violent crime and anti-social behavior (Office of the Deputy Prime Minister, UK, 2003).

Delivering SSH promotes affordability, increases supply, ensures high quality homes, and improves access to decent housing that achieves user satisfaction (London Borough of BEXLEY, 2010). The general understanding of socially sustainable housing is underpinned by the principles of sustainable communities where people want to live and work, now and in the future. A livable social homes meets the diverse needs of existing and future residents, including housing that is inclusive, well planned and offers equality of opportunity and good services for all (Wiesel and Davison, 2012).

SSH also promotes the provision of a well-integrated mix of decent homes of different types and tenures to support a range of household sizes, ages and incomes (Power, 2004; Government of Ireland, 2009). Community cohesion helps to protect and enhance community spirit and promote a sense of cultural identity, belonging and well-being.

The long-term social benefits of SSH can strongly improve welfare and quality of life of residents and deliver co-benefits in terms of social integration, lower health costs, increased performance and productivity (UNEP, 2013). SSH can help to meet the diverse needs of all people, in the existing and future communities, promoting personal well-being, social cohesion and inclusion, and creating equal opportunity for all (Cooper and Jones, 2008). SSH means improving the quality of human life while living within the carrying capacity of supporting eco-systems (Aluko, 2011; Vale of White Horse District Council, 2012).

'Provide skills acquisition and job opportunities' and 'promote equity' were also ranked 2nd and 3rd respectively in the document analysis. This outcome shows that SSH concept promotes a prosperous economy that can help to develop new skills through education and training for enhanced local jobs and employment opportunities (Power, 2004). For social housing to be sustainable, it is important that residents have access to employment, services and facilities, consistent with what most people would consider reasonable (Wiesel and Davison, 2012). SSH concept can also help to provide a housing environment and opportunities that are accessible to everyone without discrimination and achieve gender and racial equality in meeting housing needs (Basildon Borough Council, 2011). SSH can also assist in meeting the diverse housing needs of men and women in existing and future communities, promoting their personal well-being, social cohesion and inclusion, and creating equal opportunities for all (Cooper and Jones, 2008).

Ensuring public awareness is the lowest ranked comparing both document and questionnaire analysis results. Irrespective of its rank according to the criticality of the SF, Governments should assist in counteracting negative perceptions of sustainable social and affordable housing projects as a way of overcoming community opposition and undertake specific advocacy activities in educating develop-

Table 3
Social success factors.

Social SFs	Document Analysis		Questionnaire Survey ^{III}						Overall	
			Public Sector N = 59 (100%)			Private Sector N = 120 (100%)				
	F ^I	R ^{II}	1	2	3	1	2	3	Avg. ^{IV}	Rank
Ensuring security of lives and properties	26	6	5.1	8.5	86.4	1.7	5.8	92.6	89.5	1
	21	7	6.8	5.1	88.1	0.8	12.5	86.7	87.4	2
Good quality social housing that creates the sense of place to live										
Promote social cohesion	19	8	8.5	5.1	86.4	4.1	14.9	81.0	83.7	3
Ensuring welfare and quality of life	69	1	6.8	20.3	72.9	8.3	14.0	77.7	75.3	4
Community development and access to social services	32	4	8.5	16.9	74.6	8.3	18.2	73.6	74.1	5
Provide skills acquisition and job opportunities	67	2	6.8	20.3	72.9	5.0	24.0	71.1	72	6
Promote equity	44	3	6.8	15.3	78.0	3.3	33.3	63.3	70.65	7
Ensuring public awareness	10	9	13.6	22.0	64.4	7.4	19.8	72.7	68.6	8
Ensuring stakeholders participation	30	5	11.9	22.0	66.1	5.0	28.1	66.9	66.5	9

I: F = Frequency of occurrence.

II: R = Rank

III: Likert scale (1 = not critical; 2 = neutral; 3 = critical).

IV: average of criticality = (public sector Likert scale 3 + private sector Likert scale 3)/2.

ers about more appropriate and environmentally sustainable social housing (Gurran, 2003). It is clear that providing guidance and support for housing providers, contractors and suppliers and also home-owners, tenants and communities will be crucial in moving towards low carbon housing in the future (CIH, Northern Ireland, 2010).

6. Ranking of the critical success factors

As demonstrated in Table 4, respondents' views were tested with a one-way ANOVA in order to establish any statistically significant difference of opinions regarding the criticality of the listed economic, environmental and social CSFs to the achievement of SSH. From an economic perspective as well as from a holistic view, adequate funding provision and affordability were ranked as the most critical amongst the SFs, given that they have means value of nearly 4.5 (critical to very critical). However, respondents' opinions were not significantly different at 5% level on affordability but significantly different on adequate funding and provision. This shows that for social housing to be sustainable, it must be affordable, particularly through adequate funding that has a direct linkage with adequate provision.

Table 4 also highlighted security of lives and properties, and community development and social services as the most two critical social SFs in achieving sustainability in social housing. They were ranked 3rd and 5th in the overall ranking of the CSFs. Provision of infrastructure services, under economic SF, was also ranked 4th in the overall analysis. This suggests that all the three SFs are critical for achieving SSH.

All 04 environmental SFs, especially 'appropriate land use and development plan', 'good accessibility and provision of adequate alternative transport modes', and 'environmental protection', were ranked the lowest in the overall ranking of the CSFs. Given the importance of all these three factors, this is an unexpected result as they are all very much linked to the other social and economic CSFs, e.g. good accessibility, which is very much linked to the provision of infrastructure services; and appropriate land use and development plan, which are linked to good governance and political will. Also, considering the overall mean value, all the SFs, including the environmental factors can be considered critical (above 3) for achieving sustainability in social housing. ANOVA tests show no significant difference of opinions of the respondents on each of the environmental SFs at 5% significance level except for the use of appropriate materials. Although rating of the SFs by the two sectors does not follow any appreciable pattern, they both have strong and positive opinions about their level of criticality for achieving sustainability in social housing.

Overall, the average cumulative ranking of respondents' opinions revealed that economic CSFs ranked highest, followed by social CSFs. This is not surprising considering 3

Table 4
Criticality of economic, environmental and social success factors.

SFs	Overall (N = 179)		Public Sector (N = 59)		Private Sector (N = 120)		f-Stat	Sig
	Mean	Rank	Mean	Rank	Mean	Rank		
<i>Economic factors</i>								
Adequate funding and provision	4.43	1	4.24	2	4.52	1	4.540	0.034
Affordability	4.41	2	4.34	1	4.44	2	0.563	0.454
Provision of infrastructure services	4.22	4	4.14	3	4.26	3	0.755	0.386
Appropriate construction technology	4.11	6	4.03	4	4.14	4	0.814	0.368
Economic design and efficient use of resources	4.09	7	3.92	7	4.17	5	4.134	0.044
Good governance and political will	4.06	9	3.98	5	4.09	6	0.530	0.468
Efficient management	4.02	10	3.97	6	4.05	7	0.398	0.529
Effective legal and policy frameworks	3.73	18	3.75	8	3.72	8	0.033	0.856
<i>Environmental SFs</i>								
Use of appropriate materials	3.92	13	3.69	1	4.03	1	5.893	.016
Appropriate land use and development plan	3.72	19	3.61	2	3.78	2	1.294	.257
Good accessibility and provision of adequate alternative transport modes	3.59	20	3.49	3	3.63	3	1.016	.315
Environmental protection	3.34	21	3.41	4	3.31	4	.465	.496
<i>Social SFs</i>								
Security of lives and properties	4.28	3	4.15	1	4.35	1	2.645	.106
Community development and social services	4.17	5	4.08	2	4.22	2	1.184	.278
Promotes social cohesion	4.07	8	4.08	2	4.06	3	0.037	.847
Ensuring welfare and quality life	3.94	11	3.86	7	3.98	4	0.638	.425
Skills acquisition and job opportunities	3.93	12	3.90	5	3.95	5	0.130	.719
Promotes equity	3.89	14	3.97	4	3.85	7	0.698	.405
Quality housing provision	3.83	15	3.90	5	3.80	8	0.505	.478
Public awareness	3.81	16	3.64	9	3.88	6	2.613	.108
Stakeholders' participation	3.76	17	3.71	8	3.79	9	0.278	.599

of the top 5 CSFs and 7 of the top 10 CSFs are amongst the economic factors. This suggests perhaps that economic CSFs are most significant, particularly in terms of affordability, adequate funding and provision and good governance and political will for achieving SSH. However, all the other CSFs should not be overlooked as well.

7. Summary and conclusion

There is evidence to suggest that housing authorities and housing associations representing the public and private sectors respectively in the UK are playing a significant role in social housing provision. Their contributions and views are vital for gaining an insight into the current situation in the social housing sector. In the context of SH, the two sectors focus on meeting housing needs, but they differ based on different backgrounds, mode of operation or funding accessibility, etc. These differences suggest reasons for having varying opinions regarding certain aspects of achieving sustainability in social housing. Notwithstanding, findings from the study have shown that the two sectors seek to achieve sustainability in SHP.

From this study, it can be clearly seen that sustainability is a major issue in the social housing sector in England. However, social housing providers – housing authorities (public) and housing associations (private not-for-profit) are striving to address some of the sustainability issues in social housing. The study revealed that, despite the importance of social housing for meeting housing needs, particularly the vulnerable households in England, it is far from been sustainable. Given its significance, this study has identified the Success Factors (SFs) that can make SSH successful. The SFs were identified based on the three pillars of SD; namely, economic, environmental and social. The study identified and refined a list of SFs through a document content analysis approach and a pilot survey. The SFs were tested for level of criticality (Critical Success Factors – CSFs) with the social housing providers in England, i.e. housing authorities (public sector) and housing associations (private sector), using a postal questionnaire survey.

Overall, there is a high level of importance placed on the following list of CSFs within the three pillars of SD:

1. Adequate funding and provision.
2. Affordability.
3. Security of lives and properties.
4. Provision of infrastructure services.
5. Community development and social services.

The evidence from the study shows that sustainability/green need is important to SHP given that the impact of housing construction on the environment can be reduced in a sustainable way. However, some social housing stocks in the UK still fall short of sustainable standard, particularly the older ones. Although the public and private social housing organisations regard adequate funding as significant for achieving sustainability in social housing, the

private gives it more priority than the public. This suggests that the private sector's need for funds to operate is higher compared with the public that largely depends on public funds through budgetary allocations and tax proceeds.

Similarly, the majority of the public and private sector organisations attached more importance to economic aspect of CSFs compared to social and environmental aspects. Nevertheless, the need for addressing sustainability issues still needs the consideration of all three pillars of sustainability.

From the above, it can be concluded that all the identified SFs are critical and they can assist in achieving the sustainability agenda of the government as well as meeting the objectives of this research. The paper therefore demonstrates that achieving SSH on non-profit basis or social motive, requires more economic sacrifice than environmental and social. This is in terms of adequate funding, provision and affordability of social housing for meeting housing needs on a continuous basis. The paper also demonstrates that security of lives and properties as well as promotion of community development and adequate provision of social services are critical for achieving SSH. This shows that they are significant for ensuring residents' satisfaction and for giving the sense of secured lives and a secured place to live.

This paper recommends the use of efficient SD strategies such as adequate funding to allow for adequate supply; use of appropriate technology; use of environmental friendly materials and renewable energy and take steps for promoting users' welfare and quality of their lives in the provision of social housing. Also, efficient legal and policy frameworks for monitoring and evaluating the delivery of SSH are essential for meeting housing. This paper further recommends that social housing providers should remain focused on the 'social motive' as the rational for embarking on social housing provision, which is fundamental to the successful application of the identified SFs in this study. The stakeholders must also be proactive in their decisions and work together as a team in the provision of SSH for meeting housing needs and must consider all the aforementioned as a common goal for all.

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